

What is claimed is:

1. A method of enabling BRCA1 and h MLH1 gene testing for gene sequence variation and/or mutations, that comprises, preparing appropriate test kit primers and solvents suitable for amplifying by long distance PCR the entire gene-coding region of each of BRCA1 and MLH1 genes, to be followed by multiplex short PCR using the long PCR products as templates; providing in such test kit appropriate buffer and gel and solvent materials for use in electrophoresis in orthogonal dimensions for producing spot patterns indicative of gene sequence variations and/or mutations.
2. The method of claim 1 wherein the test kit is provided with non-denaturing gel and buffer materials suitable to enable combined mixtures of the multiplex groups of BRCA1 and MLH1 to be subjected to the electrophoresis simultaneously together.
3. The method of ^{claim 1} ~~claims~~ wherein, the kits provide the Primer Pairs A and B listed in the specification for Long Distance and Short PCR, respectively.

Test kits for enabling BRCA1 and h MLHI gene testing prepared by the method of claim 3.

add B^1
add B^2

Add 4